Quality Control Report

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	CP-2019-01-03-07 **Date: 14-09-2018**
Project Name	:	Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No 07 Byataravanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.
Agency	:	Sri.D.Narahari Benaka Developers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram. Bangalore-560003
Customer's Reference	:	BBMP/EE/BTP/WO/163/2018-19
Date of Receipt	:	10-09-2018
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013 53 Grade Ordinary Portland cement Specification . IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4 4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	11-09-2018
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.08	-
2	Finess by Air permeablity method (m^2/kg,Min)	297.4	225m^2/kg, Min
3	Density (gm/cc)	3.14	-
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	175 minutes	Not less than 30 minutes
6	Final Setting time	285 minutes	Not more than 600 minutes
7	Soundness (i.e Chatener's Method)	1.5mm	Not more than 10 mm

FOR CIVIL Pro.

R KARTHIE RECHAN
Authorized Signatory
Quality Manager

AE(Lgt)

Assistant Executive Engineer
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.
Bangalore.

CIVIL PRO BANGALORE Sig..... Date.....

****End of Report****

Format No: CP/TF/01

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2019-01-03-07** **Date: 09-10-2018**
Project Name	:	Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.
Agency	:	Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003
Customer's Reference	:	BBMP/EE/BTP/WO/103/2018-19
Date of Receipt	:	10-09-2018
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	11-09-2018
Environmental Conditions during test	:	Temperature: 26˚C Humidity: 72%

Compressive Strength

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	59.0N/mm^2	Not less than 53 N/mm^2

Ashalf. N.D
AE(L-4)

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory

CIVIL PRO BANGALORE Sig..... Date.....

Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2019-01-03-07** **Date: 13-09-2018**
Project Name	:	Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.
Agency	:	Sri.D.Narahari Benaka Developers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003
Customer's Reference	:	BBMP/EE/BTP/WO/103/2018-19
Date of Receipt	:	10-09-2018
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids, Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	10-09-2018

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : **15000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	245	245	1.6	98.4	90-100
3	20 mm	6144	6389	42.6	57.4	30-70
4	10 mm	4895	11284	75.2	24.8	10-35
5	4.75 mm	3148	14432	96.2	3.8	0-5
6	Pan	568	15000	100.0	0	---

M.D
DE(EL)

CIVIL PRO Sig..... Date..... BANGALORE

Format No: CP/TF/01

TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2019-01-03-07** **Date: 13-09-2018**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	10.5	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.7	
3	Specific Gravity	2.63	–
4	Bulk Density(Loose) (Kg/l)	1.45	–
5	Bulk Density(Compacted) (Kg/l)	1.51	–
6	Water Absorption(%)	0.28	–

BBMP(W.N.D)
AE(Tel)

FOR CIVIL Pro.

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P,
Bangalore.

CIVIL PRO BANGALORE Sig..... Date.....

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL|
GEO TECHNICAL| PROJECT MANAGEMENT| SURVEYING SERVICES |

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2019-01-03-07** **Date: 13-09-2018**
Project Name	:	Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.
Agency	:	Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003
Customer Reference	:	BBMP/EE/BTP/WO/103/2018-19
Date of Receipt	:	10-09-2018
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	10-09-2018

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	199	199	4.0	96.0	90-100
3	10 mm	3302	3501	70.0	30.0	25-55
4	4.75 mm	1244	4745	94.9	5.1	0-10
5	Pan	255	5000	100	0	_

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2019-01-03-07** **Date: 13-09-2018**

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	11.5	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	16.1	
3	Specific Gravity	2.61	_
4	Bulk Density(Loose) (Kg/l)	1.48	_
5	Bulk Density(Compacted) (Kg/l)	1.53	_
6	Water Absorption(%)	0.25	_
7	Aggregate crushing Value(%)	24.7	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.5	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signature
Quality Manager

CIVIL PRO BANGALORE Sig..... Date.....

End of Report

AE(EH)

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

Format No: CP/TF/01

TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2019-01-03-07 **Date: 13-09-2018**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangaiore-560003

Customer's Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 10-09-2018

Sample Type : Fine Aggregate

Reference to BIS codes : IS 383 : 2016 (Specification for Coarse and fine Aggregates)
IS: 2386 :1963(Part - 1, 3) RA2012
IS 2386 Part 1: Particle Size and Shape
IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption

Date of test : 10-09-2018

Total weight taken : 1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	22	22	2.2	97.8	90-100	90-100	90-100	95-100
3	2.36 mm	135	157	15.7	84.3	60-95	75-100	85-100	95-100
4	1.18 mm	187	344	34.4	65.6	30-70	55-90	75-100	90-100
5	600 micron	207	551	55.1	44.9	15-34	35-59	60-79	80-100
6	300 micron	248	799	79.9	20.1	5-20	8-30	12-40	15-50
7	150 micron	105	904	90.4	9.6	0-10	0-10	0-10	0-15
8	Pan	96	1000	100.0	0.0	---	---	---	---
Result :The tested Sample Conforms to Grading Zone II									

CIVIL PRO Sig..... Date..... BANGALORE

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2019-01-03-07 Date: 13-09-2018

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.5	_
2	Specific Gravity	2.53	_
3	Material finer than 75 micron(%)	6.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P
Bangalore.

CIVIL PRO BANGALORE Sig..... Date.....

****End of Report****

CIVIL PRO

AN ISO 9001 : 2008 COMPANY &NABL ACCREDITED LABORATORY AS PER ISO/IEC 17025:2005

4, 7TH MAIN MALLESWARAM, BANGALORE -3

Format No: CP/TF/01

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2019-01-03-07 **Date: 27/09/2018**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer's Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 22-09-2018

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 27/09/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	20/09/2018	27/09/2018	150.76 X 150.58 X 150.46	22701	**8.314**	286.4	12.6	12.5
2	PCC	M15	20/09/2018	27/09/2018	151.69 X 149.61 X 150.23	22694	**8.704**	293.4	12.9	
3	PCC	M15	20/09/2018	27/09/2018	150.10 X 150.82 X 150.58	22639	**8.694**	272.8	12.0	

AE(NDT)

Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO BANGALORE Sig..... Date.....

****End of Report****

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2019-01-03-07** **Date: 18/10/2018**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer's Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 22-09-2018

Customer ID : PCC

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M15 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 18/10/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	PCC	M15	20/09/2018	18/10/2018	149.51 X 150.13 X 149.40	22445	**8.495**	387.7	17.3	17.3
2	PCC	M15	20/09/2018	18/10/2018	151.67 X 149.20 X 150.46	22628	**8.807**	389.2	17.2	
3	PCC	M15	20/09/2018	18/10/2018	151.88 X 150.01 X 149.73	22784	**8.885**	394.4	17.3	

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO BANGALORE Sig..... Date.....

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR WMM

Lab ID : CP-RW-2019-01-03-07 **Date: 24-09-18**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Developers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 21-09-18

Type of Mix : WMM (Wet Mix Macadam)

Date of test : 21-09-18

Oven Dry Weight : 10000 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Cumulative Weight Retained (gm)	% Cumulative Weight Retained	% Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0.0	100.0	100
45	100	100	1.0	99.0	95-100
22.4	2470	2570	25.7	74.3	60-80
11.2	1600	4170	41.7	58.3	40-60
4.75	2900	7070	70.7	29.3	25-40
2.36	370	7440	74.4	25.6	15-30
0.6	1800	9240	92.4	7.6	8-22
0.075	600	9840	98.4	1.6	0-5

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P,
Bangalore.

CIVIL PRO Sig..... Date..... BANGALORE

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Page 1/1
End of Report

TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID : CP-RW-2019-01-03-0 **Date: 24-09-18**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 21-09-18

Type of Mix : Coarse Aggregate for WMM (Wet Mix Macadam)

Date of test : 21-09-18

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	306.0	306.0
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	71.0	82.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	234.7	223.5
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.5
5	Aggregate impact value	(B/A)*100	23.2	26.8
6	Aggregate impact value (Mean of two tests)	Pecentage	25.0	

Ashalu.N.D
AE(Lab)

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

CIVIL PRO BANGALORE Sig..... Date.....

FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

End of Report

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2019-01-03-07** **Date: 24-09-18**
Project Name	:	Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.
Agency	:	Sri.D.Narahari Benaka Developers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003
Customer Reference	:	BBMP/EE/BTP/WO/103/2018-19
Date of Receipt	:	21-09-18
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	21-09-18

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	10.7%	
Combined Flakiness and Elongation Index for WMM	21.5%	

AE(L2)

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P,
Bangalore.

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO BANGALORE
Sig.....
Date.....

End of Report

TEST RESULTS OF GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	CP-RW-2019-01-03-07 **Date: 29-09-18**
Project Name	:	Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.
Agency	:	Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003
Customer Reference	:	BBMP/EE/BTP/WO/103/2018-19
Date of Receipt	:	27-09-18
Type of Mix	:	BC-Plant (Bituminous Concrete)
Date of test	:	27-09-18
Oven Dry Weight	:	5000 Grams

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-1?(grading-2)
19	0	0	0.00	100.00	100
13.2	0	0	0.00	100.00	90-100
9.5	1300	1300	26.00	74.00	70-88
4.75	900	2200	44.00	56.00	53-71
2.36	550	2750	55.00	45.00	42-58
1.18	350	3100	62.00	38.00	34-48
0.6	450	3550	71.00	29.00	26-38
0.3	250	3800	76.00	24.00	18-28
0.15	550	4350	87	13.00	12-20
0.075	250	4600	92	8.00	4-10
PAN	400	5000	100	0.00	0

Assistant Executive Engineer
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.,
Bangalore.

CIVIL PRO BANGALORE Sig..... Date.....

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Page 1 of 1
End of Report

TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID : **CP-RW-2019-01-03-07** **Date: 29-09-18**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 27-09-18

Type of Mix : BC(Bitumenous Concrete)

Date of test : 27-09-18

Type of Binder : 60/70

% of Binder Used : 5.0%

Weight of Aggregate : 200.0 gm

Weight of Binder : 10.0 gm

Temperature of water bath : 40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	99.6	0.4	98.1	Minimum Retained Coating 95%
2	98.7	1.3		
3	96.0	4.0		

AE(Civil)

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO Sig..... Date..... BANGALORE

****End of Report****

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

PHYSICAL REQUIREMENTS FOR COARSE AGGREGATE FOR BITUMINOUS CONCRETE

Date: 29-09-18

Lab ID	:	CP-RW-2019-01-03-07
Project Name	:	Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.
Name of Work	:	Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.
Agency	:	Sri.D.Narahari Benaka Developers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003
Customer Reference	:	BBMP/EE/BTP/WO/103/2018-19
Date of Receipt	:	27-09-18
Type of Mix	:	BC (Bituminous Concrete)
Date of test	:	27-09-18

Table 500-16 : Physical Requirements fo Coarse Aggregate for Bituminous Concrete

Property	Test	Result	Specification	Method of Test
Partical Shape	Flakiness Index	10.5	Combined Flakiness & Elongation Index for BC is Maximum 35%	IS:2386 Part I
	Elongation Index	9.0		
Strength	Aggregate Impact Value	22.6	Maximum 24%	IS:2386 Part IV
Specific gravity	Specific gravity	2.63	Maximum 2.7	IS:2386 Part III
Water Absorption	Water Absorption	1.91	Maximum 2%	IS:2386 Part III

AE(Tech)

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quallity Manager

CIVIL PRO BANGALORE Sig..... Date.....

End of Report

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL |
GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

TESTS RESULTS ON STABILITY OF MIX

Lab ID : CP-RW-2019-01-03-07 **Date: 29-09-18**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Developers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 27-09-18

Type of Mix : BC (Bituminous Concrete)

Date of test : 27-09-18

The results of the tests conducted on the Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Sccified limits as per MORTH specification table 500-11
1	Marshal Stability at 60°C. KN	13.92	12.45	10KN(min)
2	Marshal flow at 60°C, mm	3.46	3.80	2-4
3	Percent air Voids	4.86	3.89	3-5
4	Percent Voids in mineral Aggregate(VMA %)	14 62	15.66	13-15
5	Percent Voids filled with Bitumen(VFB %)	75.87	65.47	65-75
6	Density, g/cc	2.22	2.24	–

Asstt. Executive Engineer
Kodigehalli Sub Division
Yelahanka Zone, B.B.M.P.
Bangalore.

FOR CIVIL Pro.
R.KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO BANGALORE Sig.: Date:

End of Report

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Date: 03-10-18

Lab ID : CP-RW-2019-01-03-07

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 01-10-18

Type of Mix : BC (Bituminous Concrete)

Date of test : 01-10-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	506	506
2	Weight of the sample After extraction	B	478	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.53	5.93
4	Average percentage	%	5.7	

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO Sig..... Date..... BANGALORE

Lab ID : CP-RW-2019-01-03-07 **Date: 03-10-18**

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 478

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	78	82	17.2	82.8	70-88
4.75	112	194	40.6	59.4	53-71
2.36	78	272	56.9	43.1	42-58
1.18	30	302	63.2	36.8	34-48
0.6	18	320	66.9	33.1	26-38
0.3	46	366	76.6	23.4	18-28
0.15	50	416	87.0	13.0	12-20
0.075	30	446	93.3	6.7	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 476

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.4	62.6	53-71
2.36	88	266	55.9	44.1	42-58
1.18	29	295	62.0	38.0	34-48
0.6	11	306	64.3	35.7	26-38
0.3	46	352	73.9	26.1	18-28
0.15	45	397	83.4	16.6	12-20
0.075	55	452	95.0	5.0	4-10

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Assistant Executive Engineer
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore.

CIVIL PRO Sig..... Date..... BANGALORE

AE(LT)

End of Report

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

TEST RESULTS OF BITUMEN BINDAR CONTENT AND GRADATION FOR BC
IS 2386 (Part 1) 1963 (RA 2011)

Lab ID : CP-RW-2019-01-03-07 **Date: 05-10-18**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 04-10-18

Type of Mix : BC (Bituminous Concrete)

Date of test : 04-10-18

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	506	506
2	Weight of the sample After extraction	B	479	476
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	5.34	5.93
4	Average percentage	%	5.6	

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

CIVIL PRO BANGALORE Sig..... Date.....

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

Lab ID : CP-RW-2019-01-03-07 Date: 05-10-18

AFTER EXTRACTION - Trail-1

Total Weight of the Sample(gm) : 479

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	78	82	17.1	82.9	70-88
4.75	112	194	40.5	59.5	53-71
2.36	88	282	58.9	41.1	42-58
1.18	29	311	64.9	35.1	34-48
0.6	18	329	68.7	31.3	26-38
0.3	46	375	78.3	21.7	18-28
0.15	48	423	88.3	11.7	12-20
0.075	55	478	99.8	0.2	4-10

AFTER EXTRACTION - Trail-2

Total Weight of the Sample(gm) : 476

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-23(grading-2)
19	0	0	0.0	100.0	100
13.2	4	4	0.8	99.2	90-100
9.5	62	66	13.9	86.1	70-88
4.75	112	178	37.4	62.6	53-71
2.36	88	266	55.9	44.1	42-58
1.18	29	295	62.0	38.0	34-48
0.6	11	306	64.3	35.7	26-38
0.3	46	352	73.9	26.1	18-28
0.15	45	397	83.4	16.6	12-20
0.075	55	452	95.0	5.0	4-10

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

CIVIL PRO BANGALORE Sig..... Date.....

End of Report

Format No: CP/TF/01

TEST REPORT ON BITUMEN

Lab ID : **CP-RW-2019-01-03-07** **Date: 26-09-18**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Developers and Project Pvt.Ltd. #34, II no Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Customer's Reference : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 25-09-18

Sample ID No : 2018-10-08-01/01

Sample Type : Bitumen

Reference to BIS codes : IS: 1201-1220(1978) (Reaffirmed-2004)

Date of test : 25-09-18

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	65	60 to 70
2	Softening Point, °C	51.4	Min. 40°C
3	Ductility, cm	96	Min. 75cm
4	Flash point, °C	245	Min. 220°C
	Fire point, °C	274	

FOR CIVIL Pro.

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.,
Bangalore.

CIVIL PRO Sign. P... Date..... BANGALORE

****End of Report****

M : 9972924526 | Tel : +91 80 23444801 | e : rechan6630@yahoo.co.in, civilproexperts@gmail.com

DETERMINATION OF RATE OF SPREAD TACK COAT

Lab ID : **CP-RW-2019-01-03-07** **Date: 03-10-18**

Project Name : Package-3, includes 4 Works of Rs.200.00Lakhs 1)Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in ward no.07 Byatarayanapura. 2) Improvements to Roads and Drains of Mariyannapalya and Surrounding areas in Ward No.07 Byatarayanapura. 3)Improvements to Roads and Drains of Gopalappa Layout and chinnappa Layout in Ward No.07 Byatarayanapura 4)Improvements to Roads Drains of Hotteppa Layout,Khasinagara and Surrounding areas in Ward No.07 Byatarayanapura.

Name of Work : Improvements to Roads and Drains of Chiranjeevi Layout Extension and Surrounding areas in Ward No.07, Byatarayanapura.

Agency : Sri.D.Narahari Benaka Develoopers and Project Pvt.Ltd, #34, II nd Floor, II nd Cross, Sampige Road, Malleswaram, Bangalore-560003

Work Order Ref : BBMP/EE/BTP/WO/103/2018-19

Date of Receipt : 03-10-18

Type of Mix : Tack coat

Date of test : 03-10-18

Sl.No	Determination	Unit	TEST 1	TEST 2
1	Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
2	Area of Plate (a)	Sq.mtr	0.09	0.09
3	Initial Wt of empty Plate (b)	Kg	0.748	0.749
4	Final weight of plate after application of tack Coat (c)	Kg	0.771	0.772
5	Weight of tack Coat (d=c-b)	Kg	0.023	0.023
6	Rate of spread of tack coat	Kg/sq.m	0.256	0.256
7	Average	Kg/sq.m	0.256	
8	Specified Limit	Kg/sq.m	0.250 Kg/sq.m	

AEE. N.D
DE(WZ)

Assistant Executive Engineer,
Kodigehalli Sub Division,
Yelahanka Zone, B.B.M.P.
Bangalore.

CIVIL Pro. Sig..... Date..... BANGALORE

FOR CIVIL Pro.
R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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